

LISTING OF THE CLAIMS

1. (Original) A rotational medical device, comprising:
an elongate flexible tubular body, having a proximal end and a distal end;
a rotatable element extending through the body;
a rotatable cutter at the distal end of the body and connected to the rotatable element;
a control on the proximal end of the body; and
a sensor on the device in electrical communication with an indicator, for indicating resistance to rotation of either the rotatable element or rotatable cutter.
2. (Original) A rotational medical device as in Claim 1, wherein the indicator comprises a source of tactile feedback.
3. (Original) A rotational medical device as in Claim 1, wherein the indicator comprises at least one light.
4. (Original) A rotational medical device as in Claim 1 further comprising a reverse direction control such that the rotatable cutter can be rotating in either of two directions.
5. (Original) A rotational medical device as in Claim 1, wherein the rotatable cutter comprises a generally helical thread.
6. (Previously Presented) A rotational medical device as in Claim 1, wherein the rotatable element is positioned entirely inside of the tubular body.
7. (Previously Presented) A rotational medical device as in Claim 1, further comprising an annular space between the rotatable element and an interior wall of the tubular body.
8. (Original) A rotational medical device as in Claim 1, wherein the control unit is attached to the proximal end of the body by a rotatable hub.
9. (Original) A rotational medical device as in Claim 1, further comprising a reinforcing sleeve over at least a portion of the proximal end of the body.
10. (Original) A rotatable medical device as in Claim 1, wherein the rotatable element and the cutter can translate relative to the body.
- 11.-20. (Canceled)
21. (Previously Presented) A rotational medical device, comprising:

an elongate flexible tubular body, having a proximal end and a distal end;
a rotatable element extending through and spaced radially inwardly from the body;
an aspiration lumen extending through the tubular body in between an interior wall of the elongate flexible tubular body and exterior wall of the rotatable element;
a rotatable cutter at the distal end of the body, connected to the rotatable element;
and

a control on the proximal end of the body;
wherein the tubular body has a first cross-sectional area, and the aspiration lumen has a second cross-sectional area, and the cross-sectional area of the aspiration lumen is at least 35% of the cross-sectional area of the tubular body.

22.-28. (Canceled)

29. (Previously Presented) A rotational medical device, comprising:

an elongate flexible tubular body, having a proximal end and an open distal end;
a rotatable element extending through the body;
a rotatable cutter disposed within the tubular body at the distal end of the body and connected to the rotatable element;
a control on the proximal end of the body; and
an axially extending annular aspiration channel defined by and located between the rotatable element and the tubular body.

30. (Original) A rotational medical device as in Claim 29, further comprising an indicator for indicating changes in flow through the aspiration channel.

31. (Original) A rotational medical device as in Claim 29, wherein the control is mounted on a handle configured for one hand operation of the rotational medical device, and the control activates both rotation of the rotatable cutter and an application of a vacuum.

32. (Original) A rotational medical device as in Claim 31, wherein the control is activatable by single finger operation, and, upon actuation thereof, initiates the application of the vacuum within the tubular body before initiating rotation of the rotatable tip.

33. (Original) A rotational medical device as in Claim 32, further comprising a shipping lock-out wire adapted to hold the control in a vacuum activated position and rotation deactivated position.

34.–59. (Canceled)

60. (Previously Presented) A rotational medical device, comprising:
an elongate flexible tubular body, having a proximal end and a distal end;
a rotatable element extending through the body;
a rotatable cutter at the distal end of the body and connected to a motor through the rotatable element;
a control on the proximal end of the body; and
a sensor on the device in electrical communication with a motor control circuit, wherein the motor control circuit is capable of receiving a signal from the sensor for indicating an operating condition based upon resistance to rotation of either the rotatable element or rotatable cutter and wherein the motor control circuit is capable of disengaging the motor rotation from the cutter in the event the operating condition indicates an overload condition.

61. (Original) A rotational medical device as in Claim 60 further comprising at least one indicator for indicating the operating condition.

62. (Original) A rotational medical device as in Claim 61, wherein the indicator includes a visual indicator.

63. (Original) A rotational medical device as in Claim 61, wherein the indicator includes an auditory indicator.

64. (Original) A rotational medical device as in Claim 61, wherein the indicator includes a tactile indicator.

65. (Previously Presented) A rotational medical device comprising an elongated tubular body, the elongated tubular body defining an aspiration channel, a cutter disposed at a distal end of the tubular body, the cutter rotatable relative to the tubular body, a control disposed at the proximal end of the tubular body, the control including a connecting hub, the connecting hub coupling the tubular body to the control such that the tubular body may rotate relative to the control during operation.

66. (Original) A rotational medical device as in Claim 65 further comprising a motor housed within the control and a flexible drive element transmitting power from the motor to the cutter, wherein the flexible drive element extends through the hub such that the flexible drive

element may rotate relative to the hub and tubular body while still allowing the tubular body and hub to rotate relative to the control.

67. (Original) A rotational medical device as in Claim 66 further comprising a drive coupling, the drive coupling comprising a sleeve and a plate which slides within the sleeve and engages the sleeve to transmit rotation between the sleeve and the plate, wherein at least one of the sleeve and plate shields the motor from fluids which may leak into the control.

68. (Previously Presented) A rotational medical device comprising a cutter, an elongated tubular body connecting the cutter to a control, the control having a drive motor, the drive motor transmitting rotation to the cutter through at least a flexible drive shaft, the cutter capable of axial displacement relative to the control during operation.

69. (Original) A rotational medical device as in Claim 68, wherein the cutter is capable of axial displacement relative to the motor.

70. (Previously Presented) A rotational medical device as in Claim 68 further comprising a transfer shaft that extends through the motor and that is coupled to an output of the motor such that the transfer shaft is capable of axial displacement relative to the motor.

71. (Original) A rotational medical device as in Claim 68, further comprising a transfer shaft that transfers rotation from the motor to the flexible drive shaft and wherein the flexible drive shaft is capable of axial displacement relative to the transfer shaft.

72.-73. (Canceled)

74. (Previously Presented) The rotational medical device of Claim 29 further comprising a cutter housing positioned at the distal end of the tubular body and within which the cutter is disposed.

75. (Previously Presented) The rotational medical device of Claim 21, wherein the aspiration lumen is defined by and located between the interior wall of the elongate flexible tubular body and the exterior wall of the rotatable element.